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GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF DECEMBER 5, 1992

1. United States:

MORE WINTRY WEATHER.

High winds, with gusts reaching 150 kph, raked parts of Montana and Idaho. Meanwhile, snow and blowing snow forced the closure of many roads in the Dakotas, according to press reports. In addition, more than a foot of snow buried parts of the central Sierra Nevada and extreme southern Rockies [Episodic Events]. Unseasonably cold conditions enveloped the central and northwestern states, with departures dipping to -9°C in parts of Colorado and Nebraska [2 weeks]. Up to 40 mm of precipitation moistened parts of the Southeast, but drier conditions were reported at most locations [Ending after 5 weeks].

2. Central South America:

ANOTHER COOL SPELL.

Widespread below normal temperatures, with departures down to -5°C in Bolivia, covered much of South America [4 weeks].

3. Europe:

MOST AREAS REMAIN WET.

Heavy precipitation (50 to 100 mm at a few locations) and high winds lashed much of Europe from the United Kingdom to Poland, with gusts reaching 130 kph in Wales, according to press reports. In addition, wet weather returned to southeastern France and northern Italy, where some locations received 100 to 250 mm of rain [10 weeks].

4. Turkey and the Middle East:

ABNORMALLY COLD CONDITIONS DEVELOP.

Temperature departures dipped to -5°C in Iran and to -7°C in Turkey as a cold spell gripped the region [2 weeks].

5. Southern Africa:

DRY WEATHER PROVIDES RELIEF FROM RECENT WET SPELL.

Little or no rain fell as drier conditions prevailed [Ended weeks].

6. Southern China:

LONG-TERM DRYNESS CONTINUES.

Precipitation totals were again below 10 mm as six-week moist deficits ranged from 50 to 100 mm [21 weeks].

7. Australia:

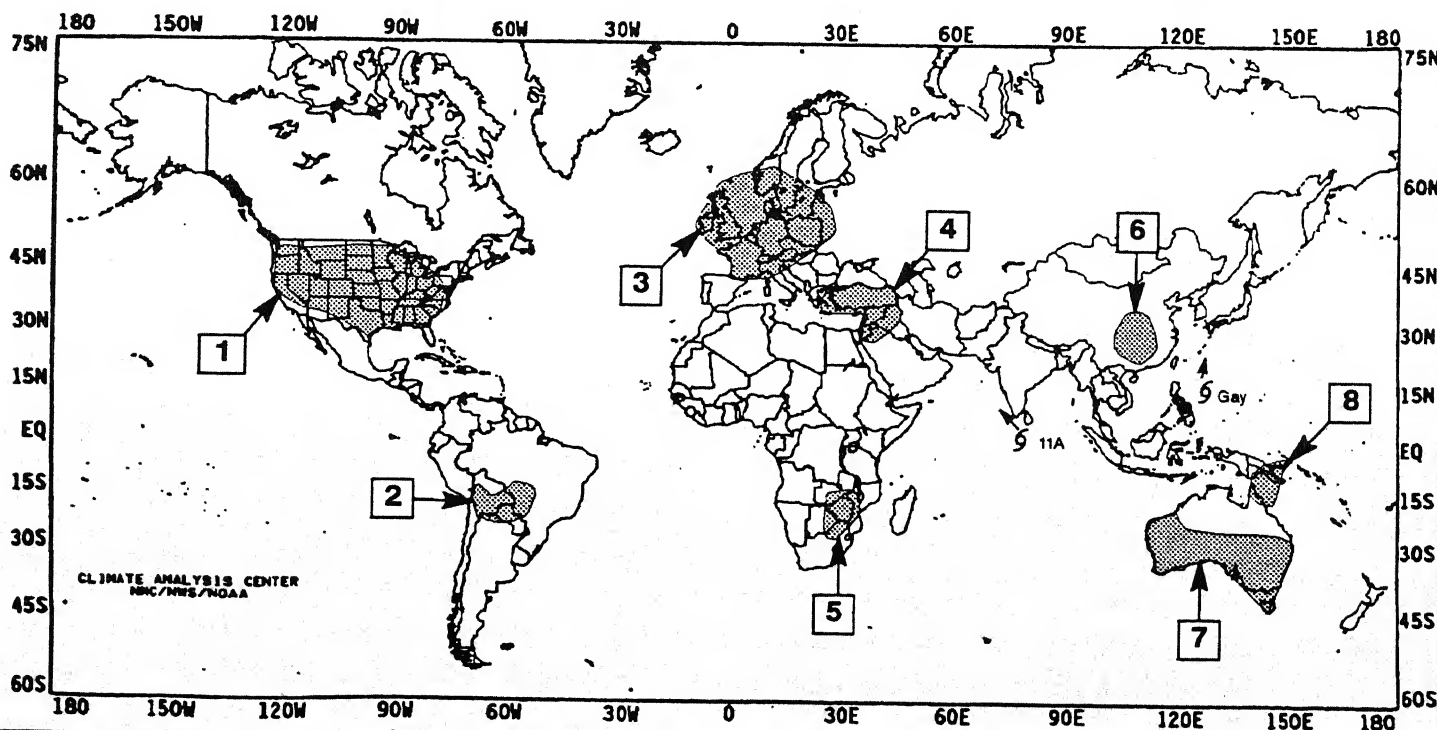
UNSEASONABLY COOL WEATHER PERSISTS.

Another abnormally cool air mass overspread much of the southeastern quadrant of the country, and temperatures remained between 2°C and 3°C below normal in much of Western Australia [11 weeks].

8. Papua New Guinea and Northeastern Australia:

RAINS EASE DRYNESS.

Up to 100 mm of rain dampened much of eastern Queensland, only 10 to 20 mm were measured in the southwestern sections on Papua New Guinea. Precipitation shortages since mid-October ranged from 80 mm in portions of Queensland to almost 300 mm on parts of Papua New Guinea [Ending at 11 weeks].

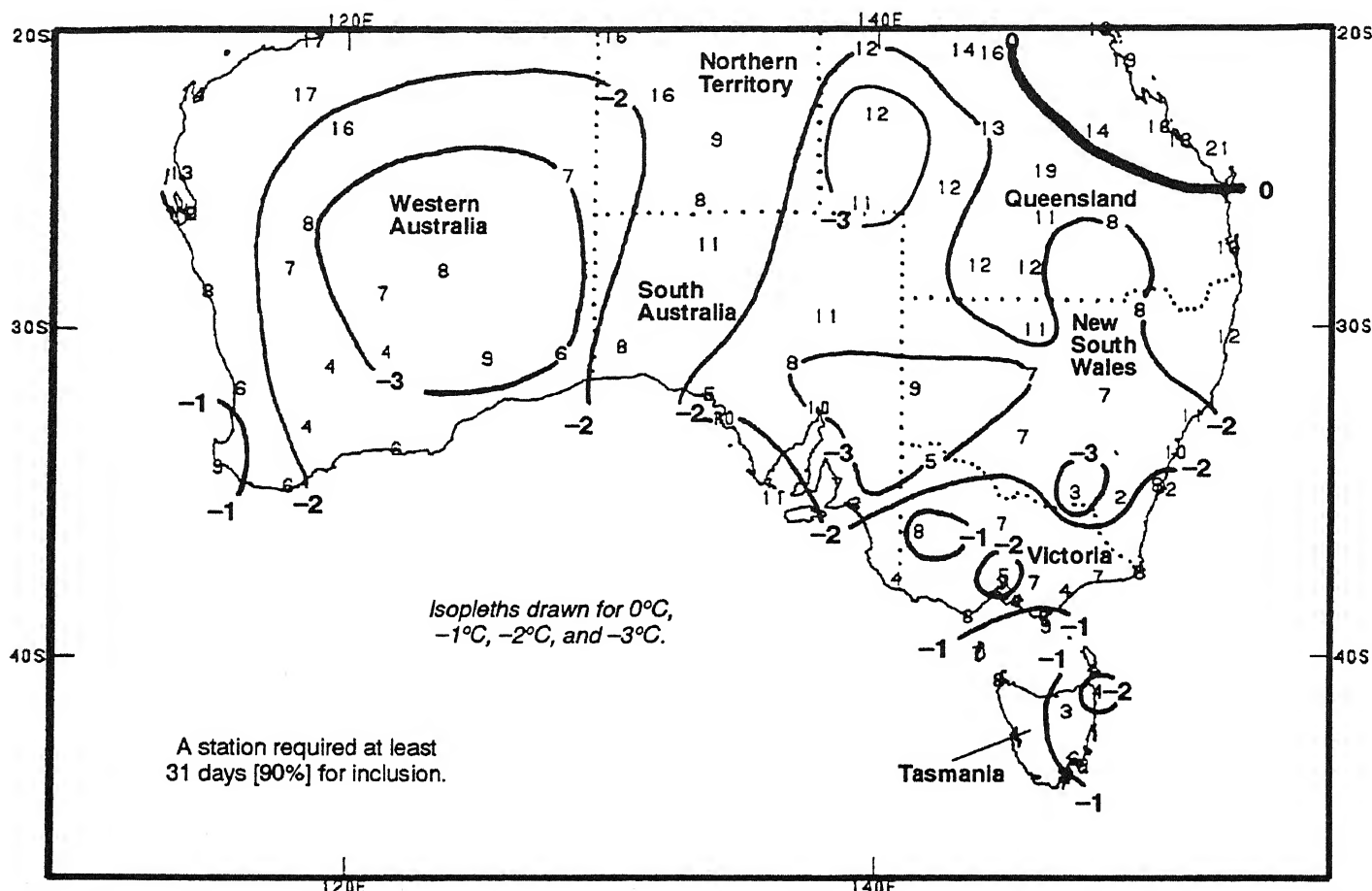


EXPLANATION

TEXT: Approximate duration of anomalies is in brackets. Precipitation amounts and temperature departures are this week's values.
MAP: Approximate locations of major anomalies and episodic events are shown. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, long-term anomalies, and other details.

GLOBAL CLIMATE HIGHLIGHTS FEATURE

PLOTTED VALUES: EXTREME MINIMUM TEMPERATURE (°C)
CONTOURS: DEPARTURE FROM NORMAL AVERAGE TEMPERATURE (°C)
November 1 – December 5, 1992 [35 days]



FIVE WEEKS OF UNSEASONABLY CHILLY WEATHER AFFECT MOST OF AUSTRALIA. *Since the beginning of November, temperatures averaged between 2°C and 3°C below normal across most of central and southern Australia, including all but the northern and western tiers of Western Australia, the southeastern two-thirds of South Australia, much of southern and western Queensland, New South Wales, and scattered locations across Victoria and Tasmania. Readings dropped down to 2°C in southeastern New South Wales. According to press reports, the unusually cool weather has slowed crop development, but four successive months of above normal rains in most of Australia boosted yields of winter crops and provided needed moisture for summer crop development. Northern and eastern sections of Queensland, however, have not experienced the cool and wet conditions observed elsewhere, and crops in those areas may have been adversely affected.*

UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF NOVEMBER 29 – DECEMBER 5, 1992

The transition into meteorological Winter (December–February) was marked by heavy snow across much of the West and Northeast, and unusually cold conditions for most of the country. A strong storm system brought copious rains and heavy mountain snows to the Southwest. Over 11 inches of rain inundated central Arizona, causing localized flooding. The heavy rains left several roads in Scottsdale, AZ submerged under 3 feet of water on Friday, according to press reports. Meanwhile, heavy snow fell from the mountains of southern California to the Rockies, with nearly two feet of snow burying the highest elevations of Arizona and New Mexico. In addition, strong wind gusts generated bitterly cold wind chills and blizzard-like conditions across portions of the Rockies and High Plains. Blowing snow left roads impassable in western Nebraska and South Dakota while an icy mixture of precipitation coated portions of the upper Midwest, creating hazardous driving conditions on Tuesday. Later in the week, a blast of frigid Arctic air dove southward out of Canada, overspreading much of the lower 48 states. Subfreezing readings reached as far south as southern California and northern Florida while temperatures plunged to -20°F and lower in the northern Rockies. More than a dozen record lows were established from California to Iowa. Farther east, heavy snow blanketed the central Appalachians and New England. Up to 17 inches of snow accumulated in western Massachusetts while 4 inches blanketed Asheville, NC. Elsewhere, more than 13 inches of rain soaked Hilo, HI, with over 7 inches falling on Monday. Unusually mild weather enveloped Alaska for the second consecutive week, with temperatures topping 32°F as far north as Nome.

The week began with relatively tranquil and cold conditions dominating the nation as domes of high pressure covered both the East and West. Lows dipped below 32°F across most of the nation west of the Appalachians on Sunday and Monday. Meanwhile, strong winds generated blowing and drifting snow across portions of the High Plains, forcing the closure of numerous roads. Winds gusted to near 100 mph near Dupuyer, MT on Monday. Elsewhere, a low raced across southeastern Canada, spreading a wintry mixture of precipitation from the upper Midwest to New England. Farther west, a cold front moved through the Pacific Northwest, dropping copious rains and heavy mountain snows. Relatively dry conditions prevailed farther south as Riverside, CA observed the first November since 1956 without measurable precipitation ($\geq 0.01''$).

Stormy weather dominated the last half of the week as storm systems dumped heavy snow from the mountains of the Far West to the Rockies and across the Northeast. A low off the north Atlantic Coast intensified rapidly, generating heavy snow from the central Appalachians to northern New England on Thursday. Farther west, blizzard-like conditions battered portions of the Rockies. More than half a foot of snow fell from southern California to Wyoming on Thursday and Friday while strong wind gusts buffeted parts of Colorado, producing wind chills down to -20°F at Colorado Springs, CO. Bitterly cold weather engulfed most of the West, establishing numerous record daily lows. Readings plunged as low as -22°F in Idaho and Wyoming on Friday.

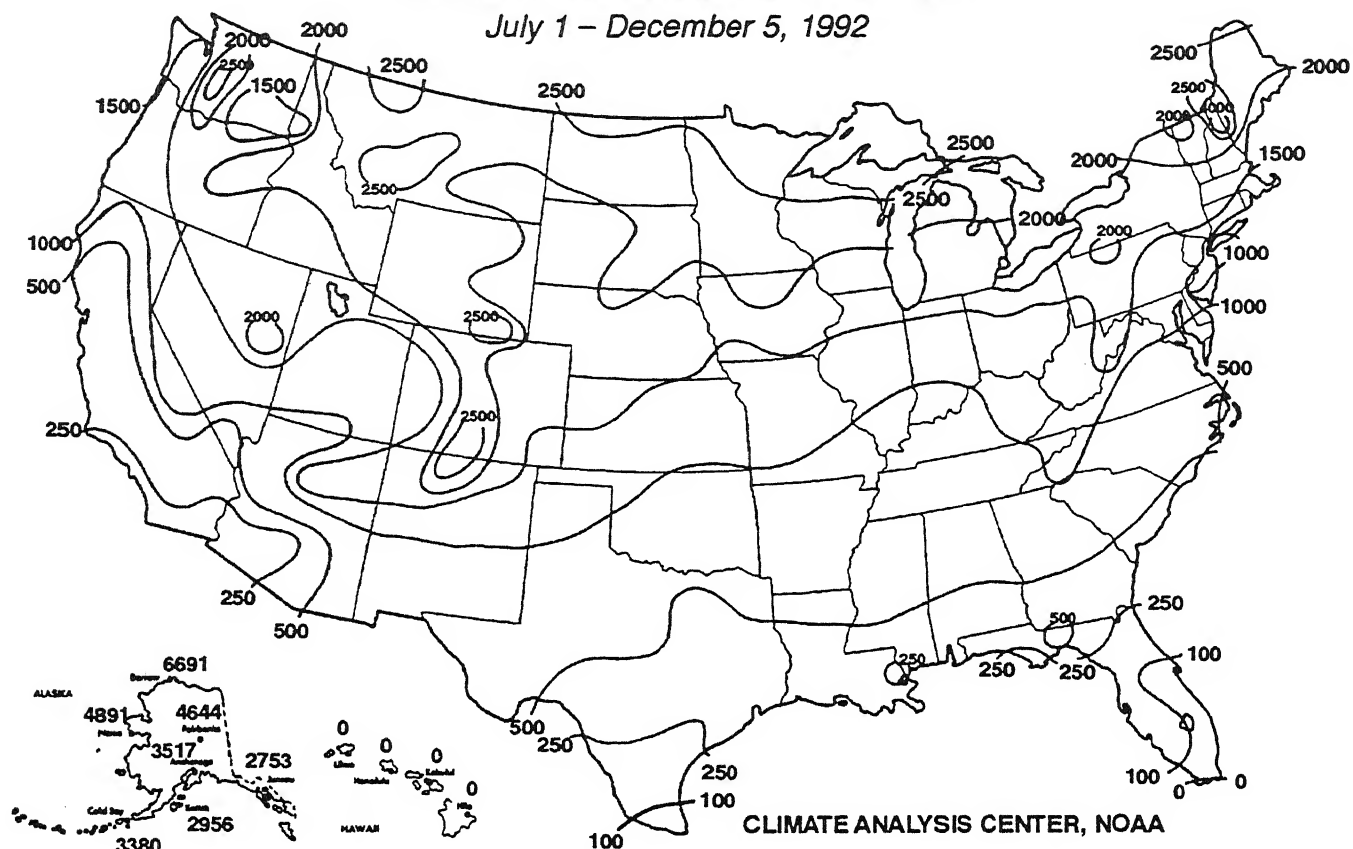
According to the River Forecast Centers, the greatest weekly precipitation totals (more than 10 inches) fell on the southern Intermountain West, along the northern half of the Pacific Coast, across extreme southern Alaska, in the eastern and western Hawaiian Islands, and on a few scattered locations in eastern Texas and the Appalachians. Light to moderate precipitation was measured from the lower Mississippi Valley northeastward to the Tennessee Valley, across the Appalachians, through most of New England, in the northern sections of the southern Plains, across the Rockies, through the northern Intermountain West, the northern half of the Far West, across most of the southern two-thirds of Alaska, and in the remainder of Hawaii. Little or no precipitation occurred in the Southeast, the Ohio Valley, the Great Lakes, the middle and upper Mississippi Valley, the Great Basin, and the remainders of the Great Plains and Alaska.

Unseasonably mild conditions were confined to the extreme northern contiguous U.S. from the northern Plains to the Northeast and across central California. Weekly departures between $+4^{\circ}\text{F}$ and $+8^{\circ}\text{F}$ were observed in northern New England while near to slightly above normal temperatures prevailed across the remainder of the aforementioned areas. In Alaska, abnormally warm weather engulfed most of the state. Weekly departures of $+10^{\circ}\text{F}$ and $+17^{\circ}\text{F}$ were common from southwestern to northern sections.

In sharp contrast, unseasonably cold conditions dominated most of the conterminous U.S. Weekly departures between -10°F and -15°F were common from the High Plains northwestward to the northern Intermountain West, where subzero lows were common. Departures between -3°F and -9°F were prevalent across the remainder of the nation.

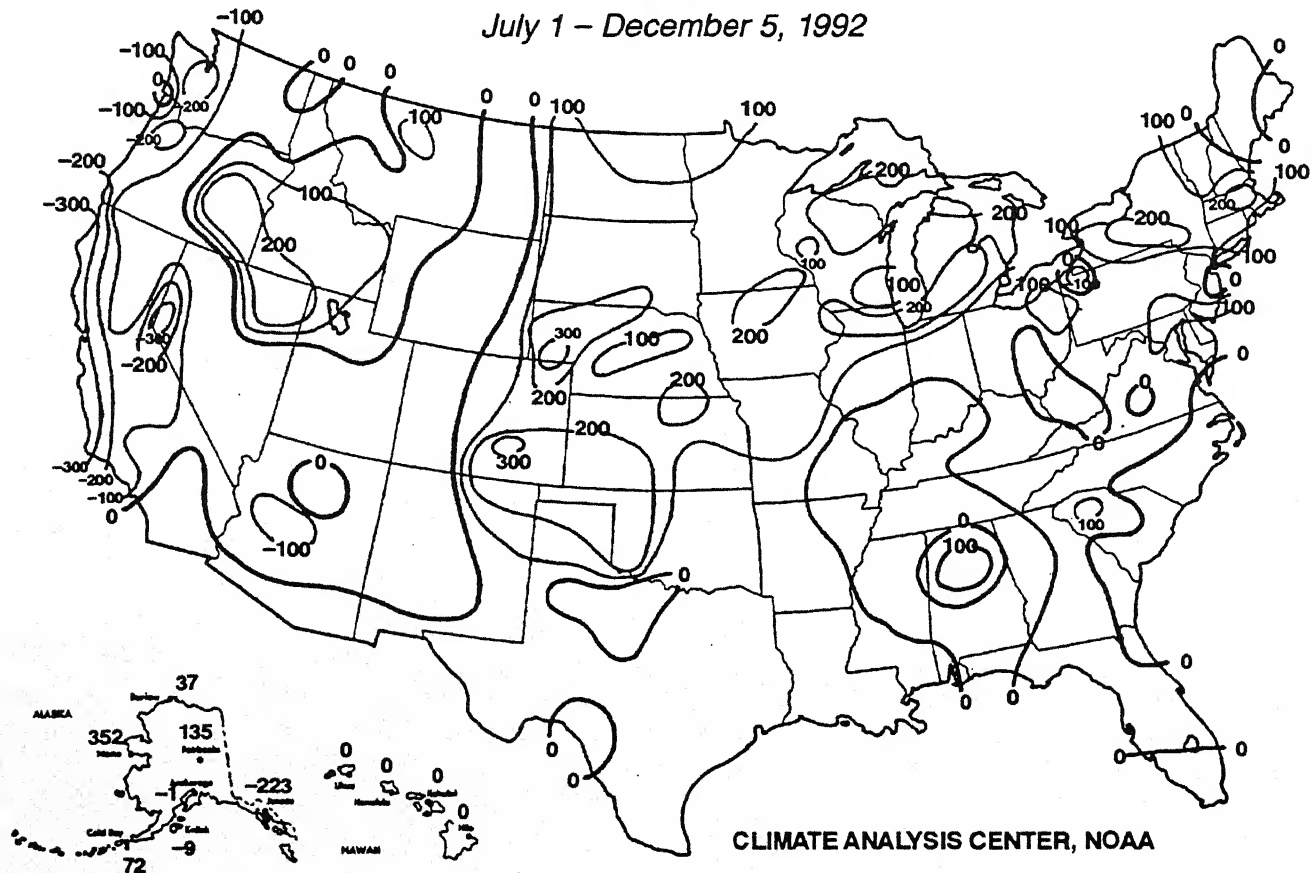
TOTAL HEATING DEGREE DAYS

July 1 - December 5, 1992

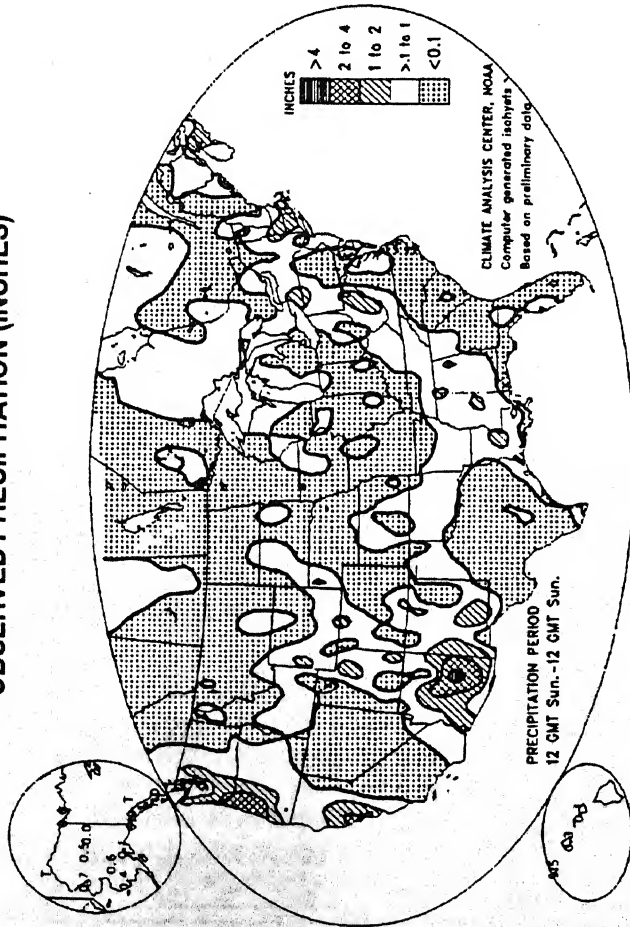


DEPARTURE FROM NORMAL HEATING DEGREE DAYS

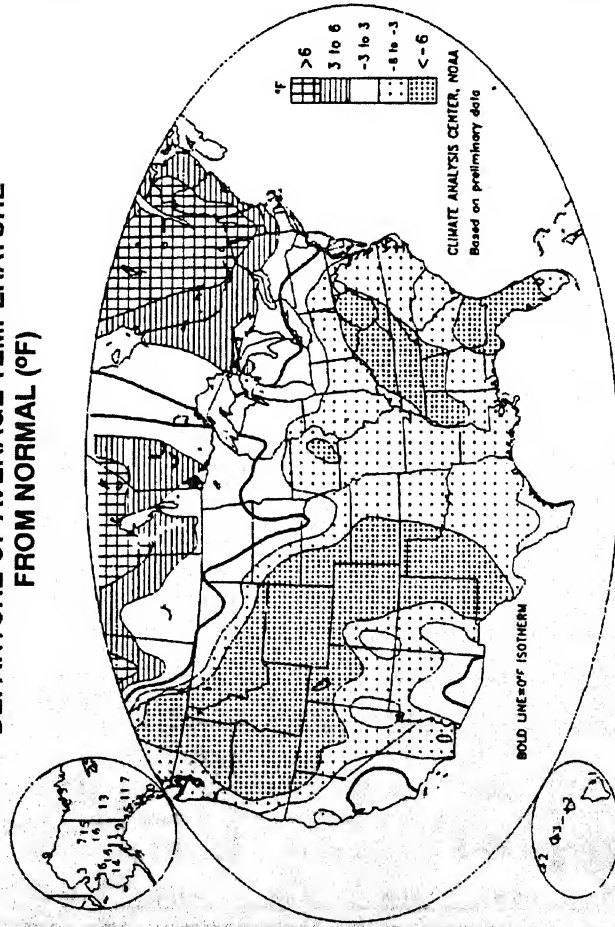
July 1 - December 5, 1992



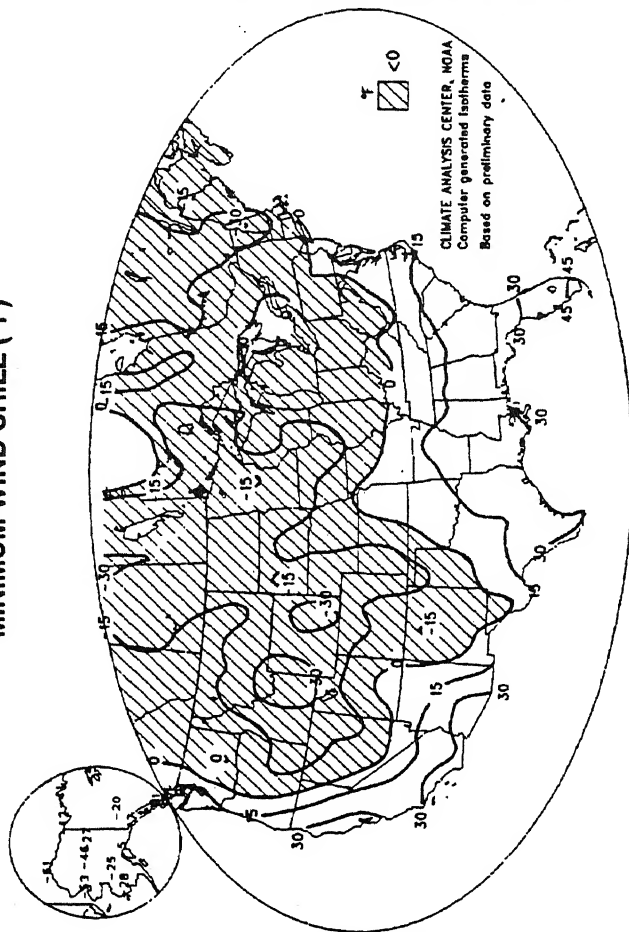
OBSERVED PRECIPITATION (INCHES)



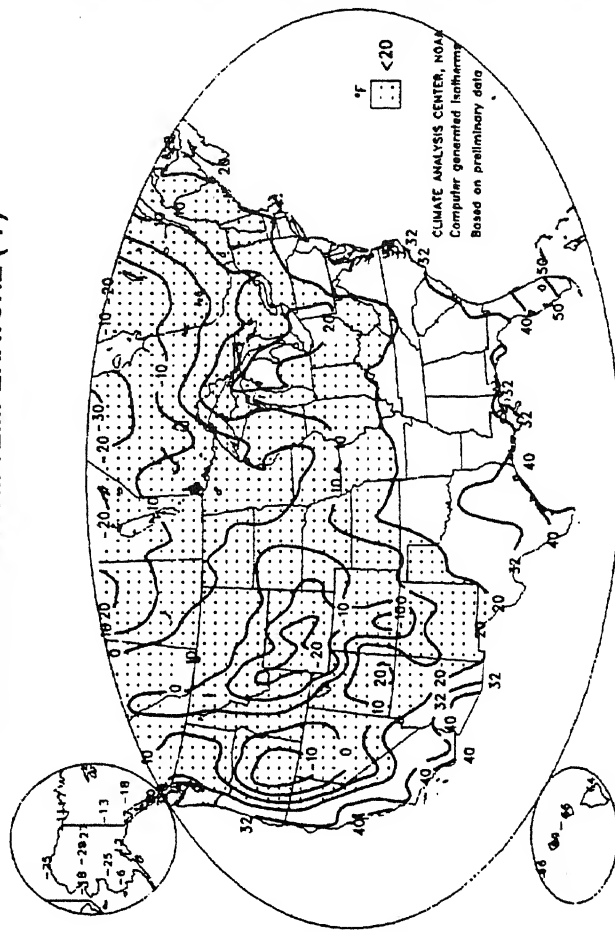
DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)



MINIMUM WIND CHILL (°F)

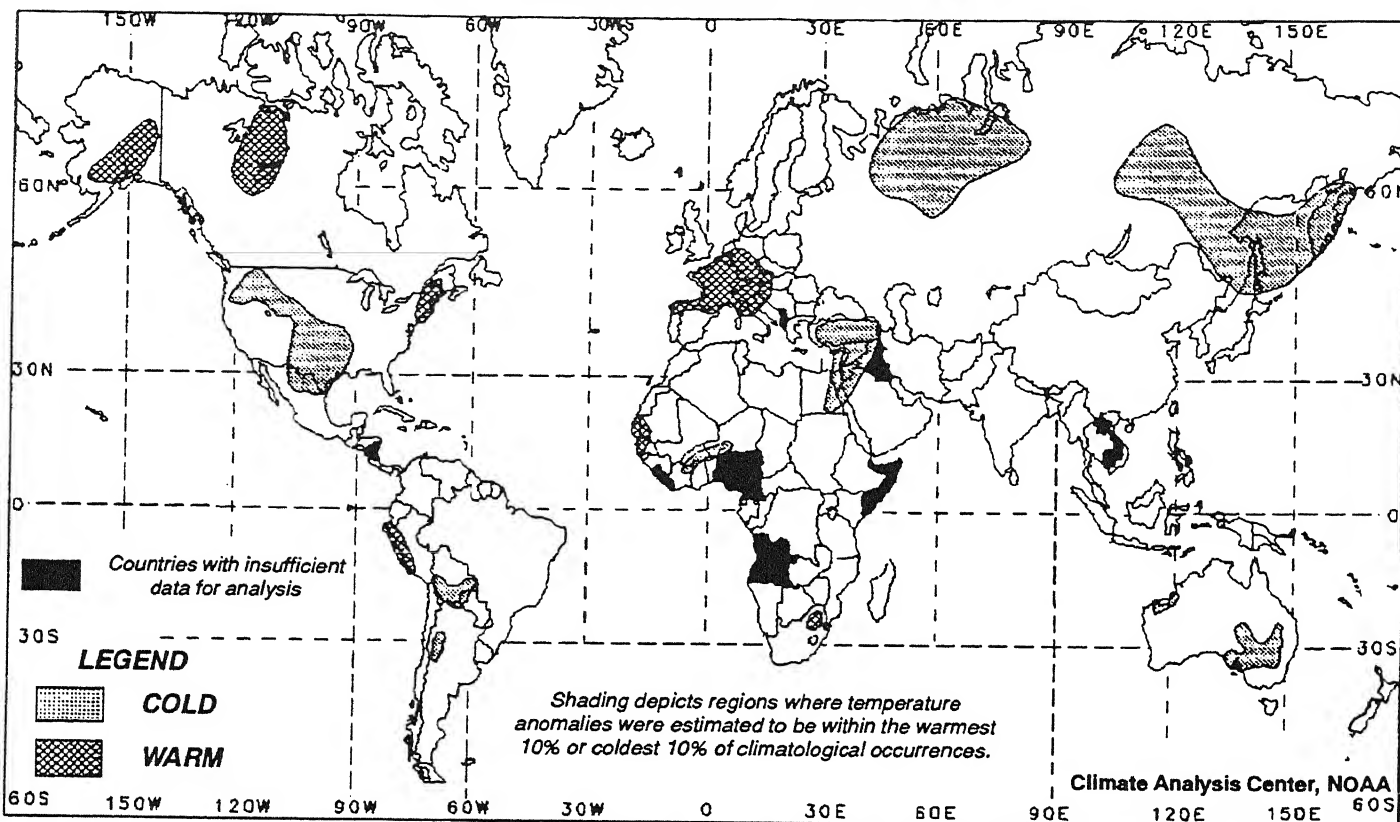


EXTREME MINIMUM TEMPERATURE (°F)



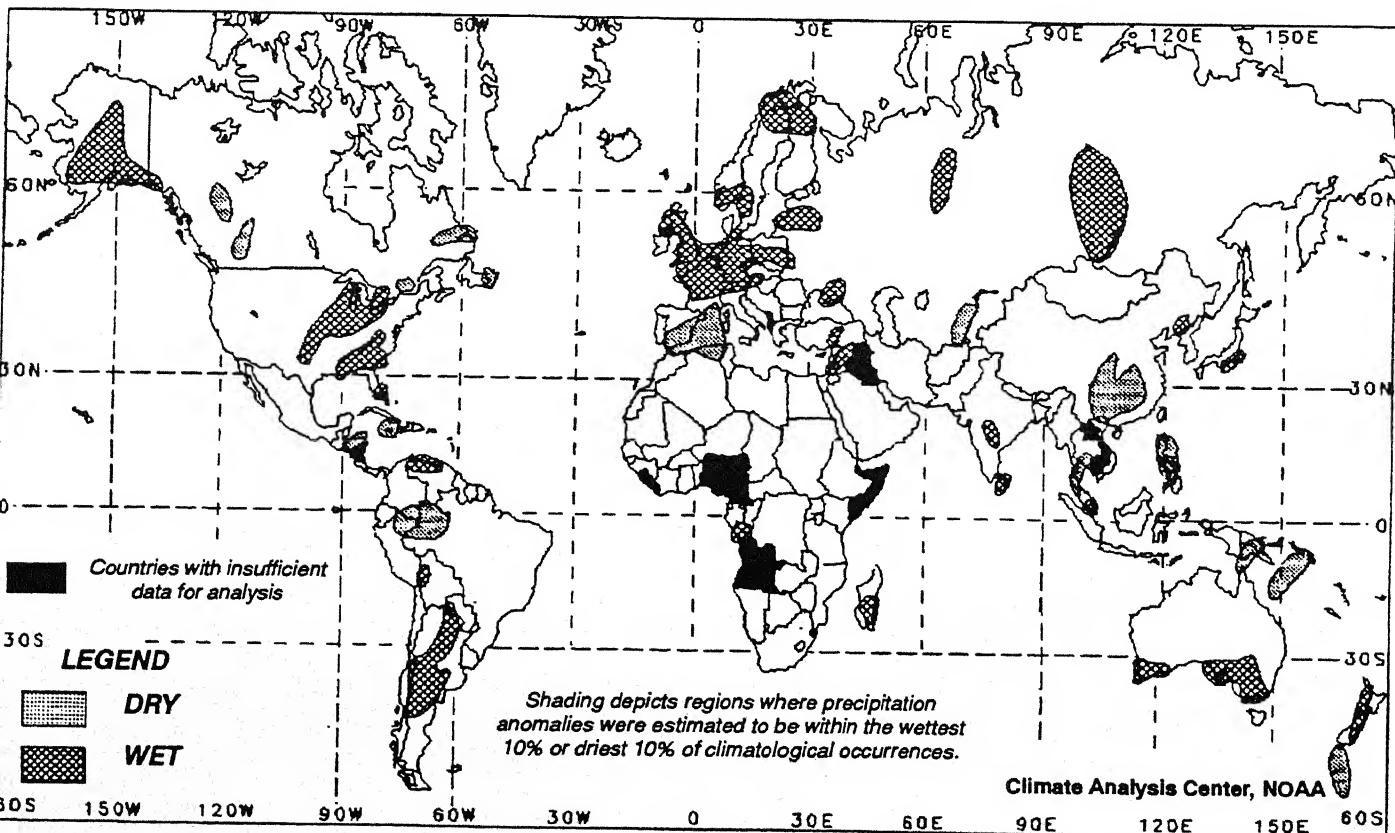
TWO-WEEK GLOBAL TEMPERATURE ANOMALIES

NOVEMBER 22 – DECEMBER 5, 1992



FOUR-WEEK GLOBAL PRECIPITATION ANOMALIES

NOVEMBER 8 – DECEMBER 5, 1992



UNITED STATES MONTHLY CLIMATE SUMMARY

NOVEMBER 1992

The first week of November was relatively wet across the nation. Storm systems delivered moderate to heavy precipitation to the northern half of the Far West, the central Rockies, the lower and upper Mississippi Valley, the Great Lakes, the eastern Corn Belt, the Southeast, the central and southern Appalachians, the northern mid-Atlantic, and the lower Northeast. As much as three feet of snow buried parts of Minnesota and the central and southwestern mountains of Colorado. In sharp contrast, record-breaking daily high temperatures and summer-like weather were observed in the Southeast, the south Atlantic, and Florida. Severe thunderstorms and several tornadoes battered the South, and up to seven inches of rain inundated parts of the Mississippi Delta, central Mississippi, and extreme western Florida. In sharp contrast, bitterly cold conditions dominated Alaska. Lows plunged to -37°F at Bettles on the first of the month.

The approaching winter season became more evident during the second week of November. Heavy snow blanketed the southern Rockies and the mountains of the Northwest while lake-effect snow squalls buried parts of Michigan, Ohio, New York, and Pennsylvania. Bitterly cold air surged into the north-central states, pushing temperatures into the teens and single digits from Montana eastward to Maine and establishing several daily record lows. Elsewhere, more heavy rain and severe weather battered the southern Plains. Thunderstorms drenched southwestern Oklahoma with more than nine inches of rain while parts of Texas received as much as six inches. Heavy rains in parts of Indiana flooded roads and sent creeks and streams out of their banks, according to press reports.

Stormy weather dominated the third week of the month. More than two feet of snow buried parts of the Rockies while lake-effect snow squalls dumped more than a foot of snow on northern Ohio. Wintry conditions also prevailed across Alaska as heavy snows and wind chills down to -40°F gripped some locations. Meanwhile, strong thunderstorms generated heavy rain, hail, and an unusually late-year outbreak of tornadoes across the southern Plains and deep South. Slow-moving thunderstorms soaked south-central Texas with more than seven inches of rain while flooding occurred in Miami after more than seven inches of rain fell in a twelve-hour period. Heavy rains also inundated Hilo, Hawaii. In the Pacific, Typhoon Gay packed winds of over 100 mph as it moved through Guam, causing minor damage, according to press reports. This system was the seventh organized tropical cyclone to affect the island in three months.

A major early-season winter storm dumped heavy snow from western Texas and northern Utah northeastward to Wisconsin during the last week of November. Nineteen inches buried parts of northern Texas, western Oklahoma, and southwestern Kansas, and four feet buried the ski resort of Alta, UT. Strong winds picked up fallen snow, reducing visibilities to near zero at times and piling up drifts ten to fifteen feet deep. Numerous roads were left impassable across western Kansas and the Panhandles of Texas and Oklahoma. In the storm's wake, subfreezing temperatures penetrated to the Texas Gulf Coast, and nearly two dozen daily record lows were established in the southern Plains and lower Mississippi Valley, where lows in the twenties were common. In sharp contrast, nearly a dozen record daily highs were set along the immediate East Coast from Florida to Maine. Strong thunderstorms, packing heavy rain,

hail, strong wind gusts, and tornadoes ravaged the deep South, the Atlantic Coast, and the Tennessee and Ohio Valleys. Six to eight inches of rain soaked parts of southern Louisiana, eastern Alabama, western Georgia, and the Carolinas. The frequent severe weather generated a record number of tornadoes in November 1992, surpassing all other such months since records began in 1953 (page 12). Heavy rains also drenched parts of Hawaii as nearly ten inches were measured at Punalulu on the island of Oahu. Farther north, extraordinarily warm conditions replaced the frigid air that had covered Alaska as readings topped 40°F as far north as Fairbanks.

According to the River Forecast Centers, heavy rains (8 to 18 inches) inundated much of the Southeast from the central Gulf Coast northeastward to the Appalachians of Virginia (figures 1 and 2). In addition, precipitation totaled 4 to 16 inches in the western parts of Oregon and Washington, and between two and four inches in the eastern sections of these states. Most of the eastern half of the nation received two or more inches of precipitation, and scattered locations of the central states from southwestern Oklahoma to northeastern Indiana received 8 to 14 inches, establishing a few monthly records (page 12). In Alaska, Yakutat was soaked by more than 27 inches of precipitation, and Hilo, Hawaii received more than 25 inches. Based on preliminary calculations from the National Climatic Data Center (NCDC), six of the nation's nine regions reported above median precipitation, with the Central and Southeast both experiencing the 3rd wettest November since records began in 1895 (page 9). In addition, the South and East North Central were ranked 5th and 6th, respectively. Across the 48 contiguous states as a whole, November 1992 ranked as the 24th wettest such month.

Subnormal precipitation was limited to the Far West, where some California locations received less than half an inch, while totals in Maine were generally under 50% of normal (figures 1 and 2, page 12). Only three of the nine NCDC regions reported below median totals, with the West experiencing the 6th driest November on record.

An abnormally cold November was observed across the Intermountain West, the Great Plains, and the Mississippi Valley, with departures approaching -9°F in southern Colorado and ranging from -3°F to -7°F elsewhere (Figures 3 and 4). According to NCDC, eight of the nine regions reported below median temperatures, with the Southwest and South ranking 6th and 10th coldest, respectively (page 11). New Mexico, Colorado, and Utah experienced the 3rd, 4th, and 5th coldest November of the last 98 years, respectively, while Kansas had the 8th and Texas the 9th coldest such month.

In sharp contrast, unusually warm weather prevailed in Florida and along the middle and southern Atlantic coast, with departures reaching $+4^{\circ}\text{F}$ (Figures 3 and 4) and a couple of extreme November temperature records established (page 12). The monthly mean temperature was above median in only one region, the Southeast, which experienced the 28th warmest November since 1895 (page 11). In Alaska, temperatures averaged as much as 7°F above normal as unseasonably mild conditions replaced the bitterly cold weather of early November. Temperatures in Hawaii were generally near normal.

PRECIPITATION PERCENTILES

NOVEMBER 1992

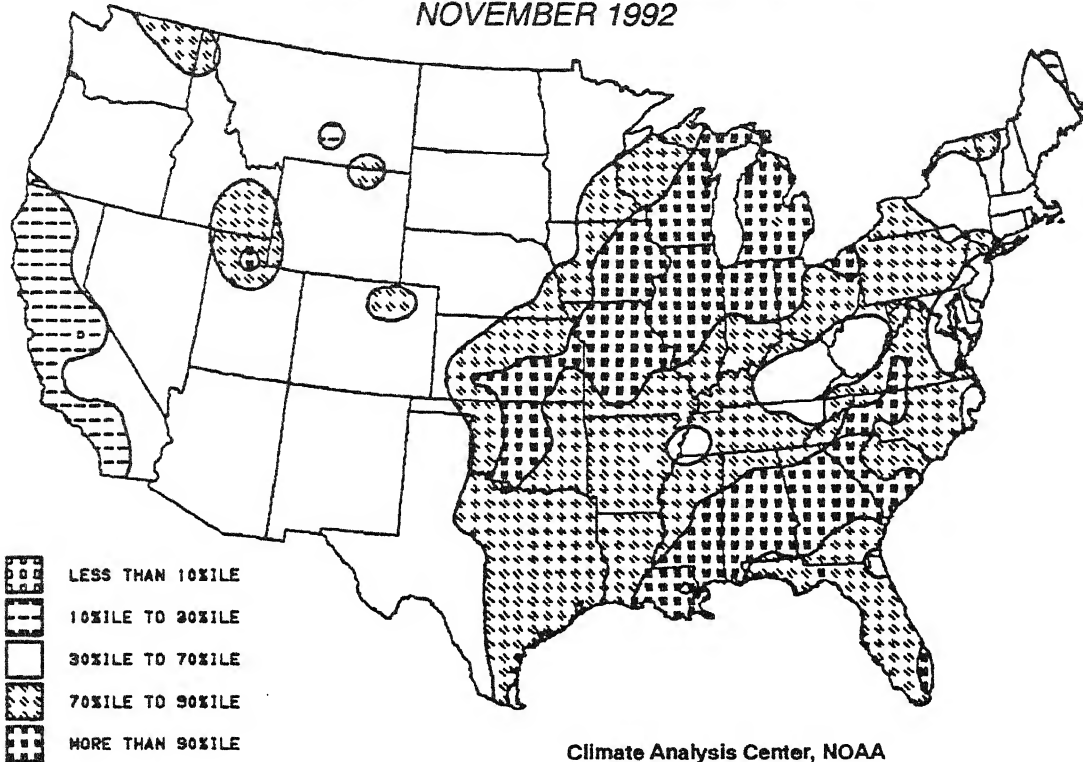


FIGURE 1. November 1992 Precipitation Percentiles. A wet month ($>70\%$ ile) was observed across much of the eastern half of the nation, with November totals among the wettest 10% of the historical (1951–1980) distribution across the central Plains and the Great Lakes region and from the central Gulf Coast to the southern Appalachians and Piedmont. Climatologically significant dryness was confined to much of California and extreme northeastern Maine.

PERCENT OF NORMAL PRECIPITATION

NOVEMBER 1992

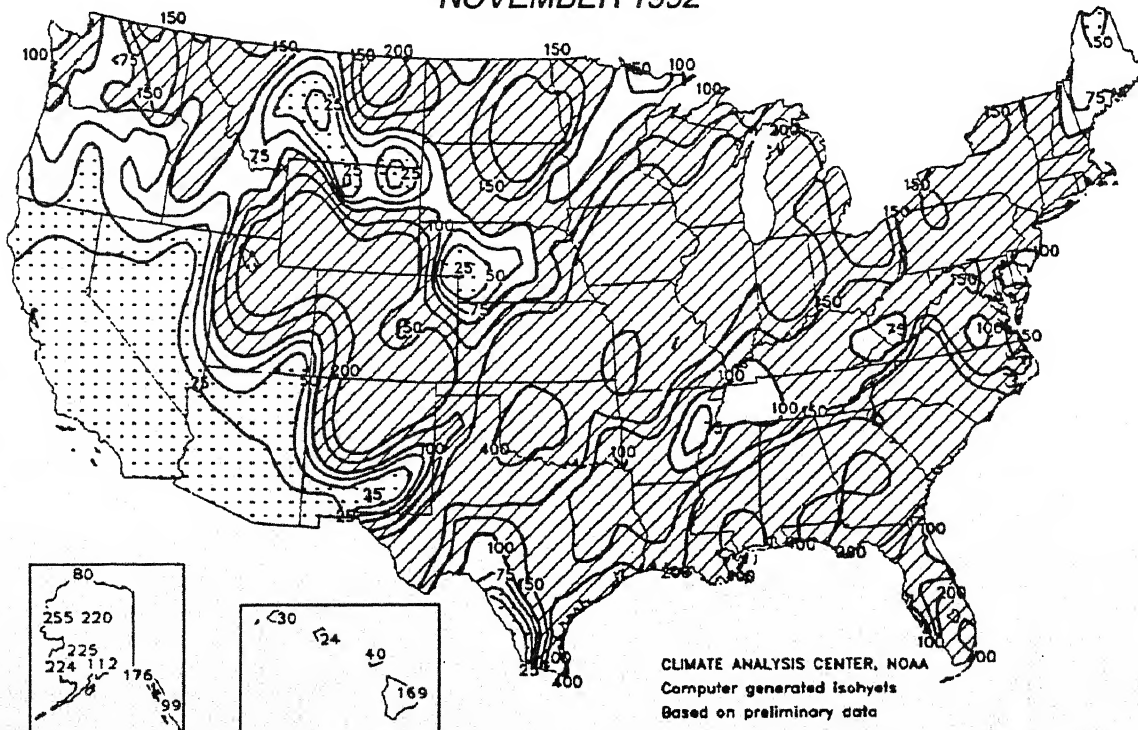
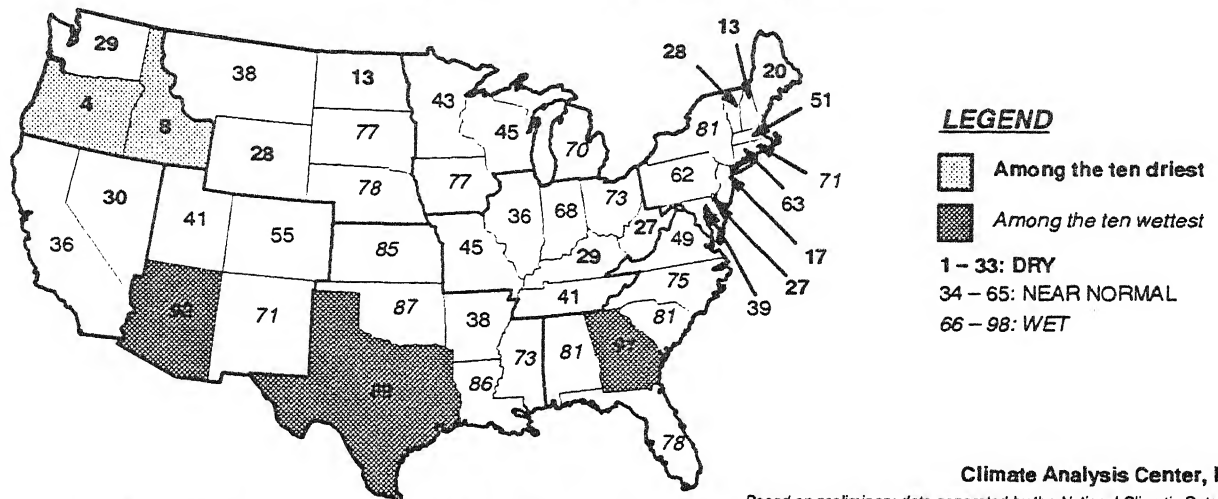


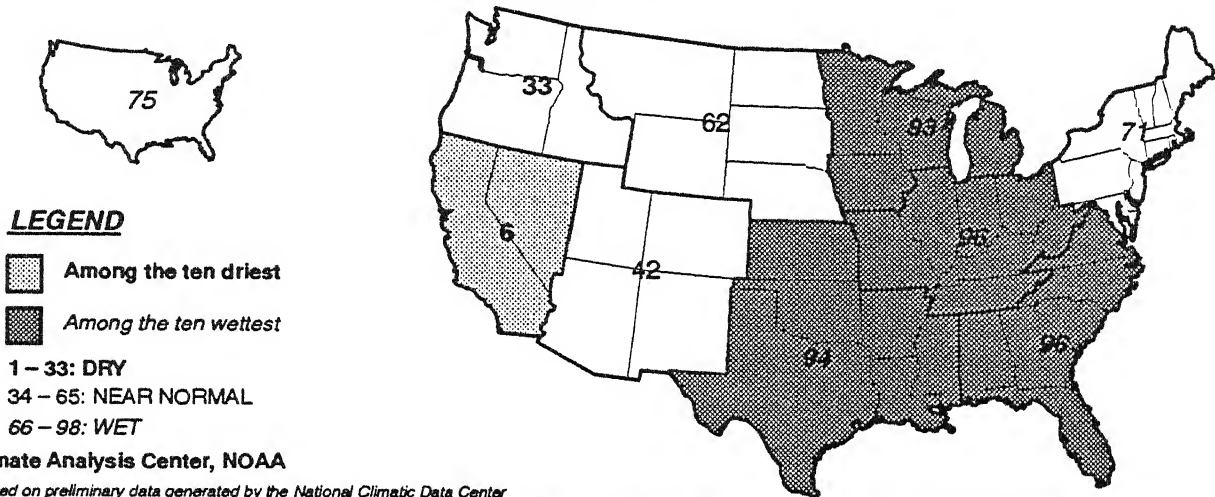
FIGURE 2. November 1992 Percent of Normal Precipitation. Hatched areas received above normal precipitation, and dotted areas reported under half of normal. Above normal precipitation prevailed across most of the nation east of the Rockies except for Maine and the northern High Plains. In addition, Alaska received greater than normal totals. In contrast, unusually low amounts fell in northern Maine and in California, Nevada, and Arizona. Small areas of Texas and the northern High Plains also reported subnormal precipitation.

ELEVEN-MONTH HISTORICAL PRECIPITATION RANKINGS BY STATE JANUARY – NOVEMBER 1992



Based on preliminary data generated by the National Climatic Data Center
This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

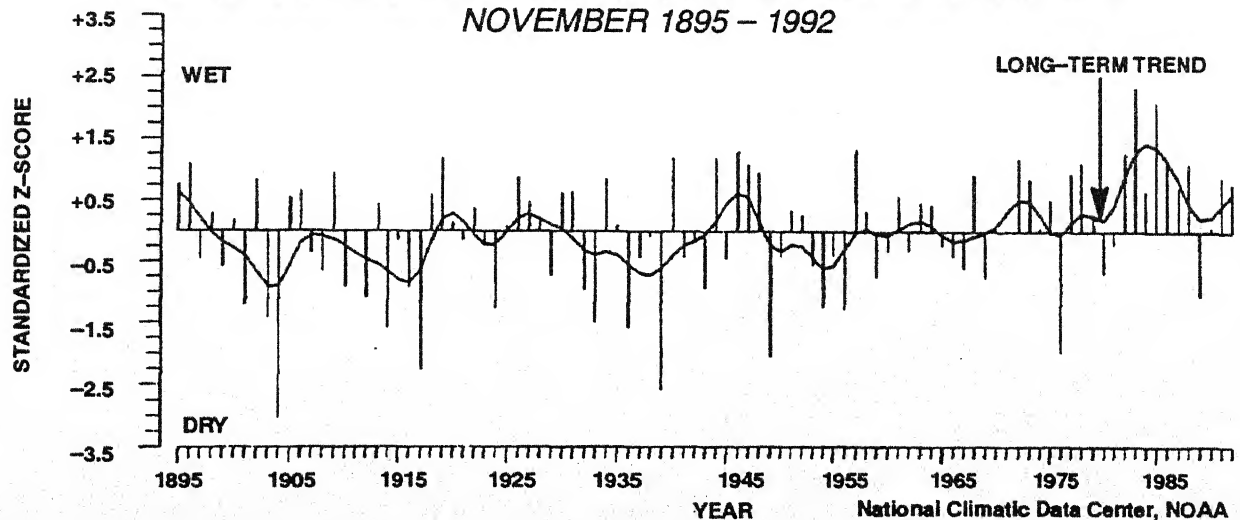
HISTORICAL PRECIPITATION RANKINGS BY REGION AND NATION NOVEMBER 1992



Based on preliminary data generated by the National Climatic Data Center

This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

U. S. NATIONAL NORMALIZED PRECIPITATION INDEX NOVEMBER 1895 – 1992



NATIONAL MEAN NOVEMBER PRECIPITATION INDEX, as computed by the National Climatic Data Center. November 1992 ranked as the 24th wettest November on record. This index takes local normals into account so that regions with large precipitation amounts do not dominate the index value.

TEMPERATURE PERCENTILES

NOVEMBER 1992

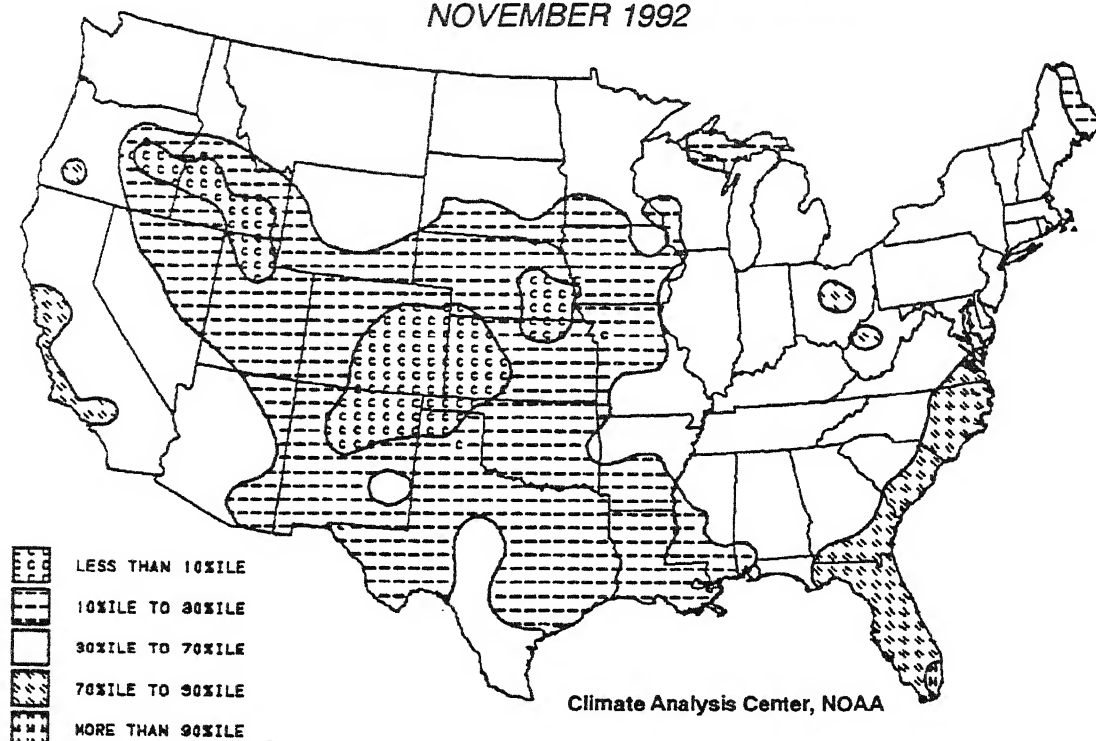


FIGURE 3. November 1992 Temperature Percentiles. *Unseasonably cold weather (<30%ile) dominated the central states and the Intermountain West, with parts of the central Plains, southern Rockies, and northern Intermountain West in the coldest 10% of the historical (1951–1980) distribution. In contrast, abnormally warm conditions (>70%ile) dominated the central California Coast, the middle and southern Atlantic Coast, and most of Florida, with the southern tip of Florida in the warmest 10% of the 1951–1980 distribution.*

DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

NOVEMBER 1992

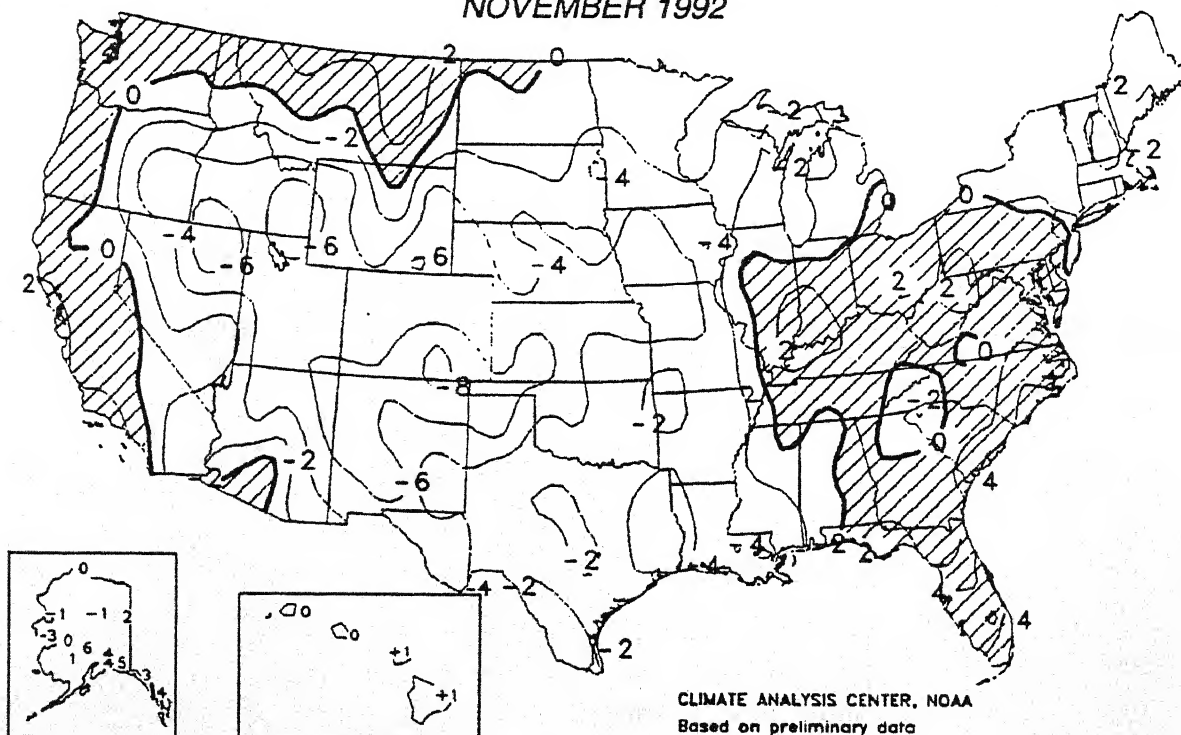
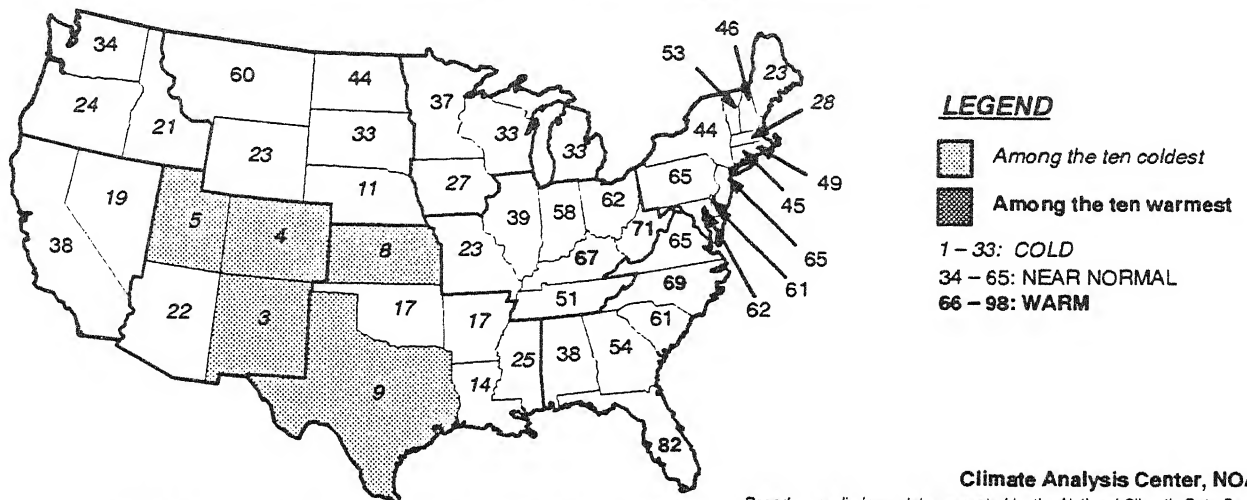


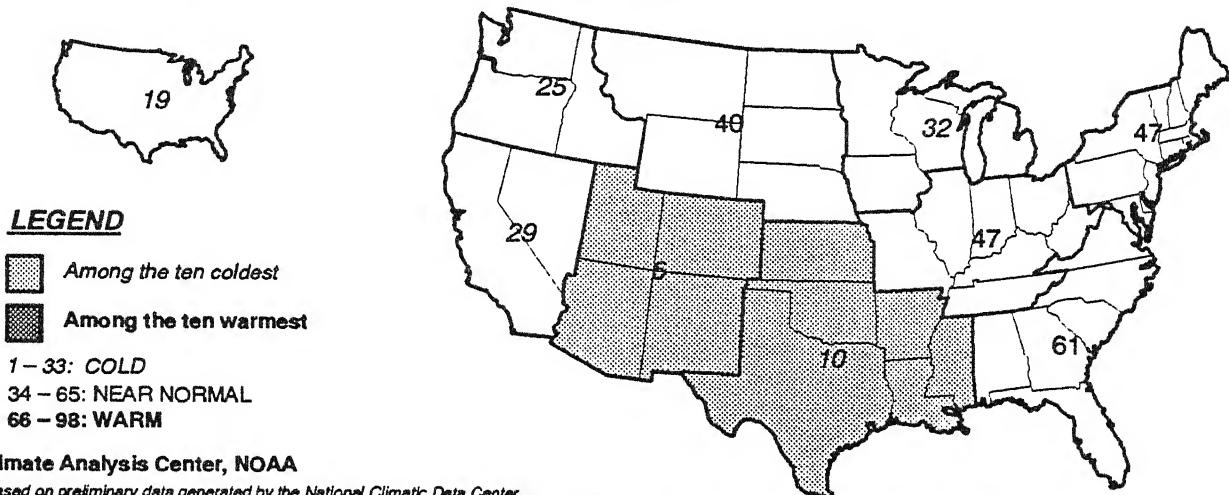
FIGURE 4. November 1992 Departure of Average Temperature from Normal (°F). *Colder than normal weather dominated the Intermountain West, the Great Plains, the Mississippi Valley, the upper Great lakes, and the Northeast, with departures below -6°F scattered across the central and southern Rockies and southern High Plains. In contrast, unseasonably warm conditions prevailed along the Pacific Coast, across the extreme northern Rockies, and throughout much of the Midwest and Southeast.*

HISTORICAL TEMPERATURE RANKINGS BY STATE NOVEMBER 1992



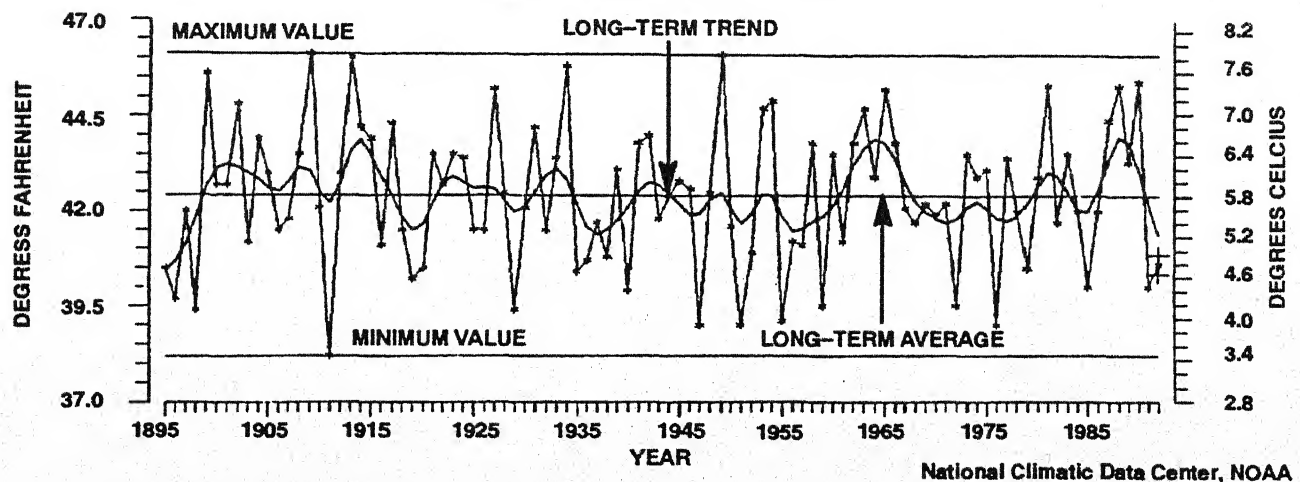
Based on preliminary data generated by the National Climatic Data Center
This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

HISTORICAL TEMPERATURE RANKINGS BY REGION AND NATION NOVEMBER 1992



Based on preliminary data generated by the National Climatic Data Center
This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

U. S. NATIONAL TEMPERATURE NOVEMBER 1895 - 1992



NATIONALLY AVERAGED NOVEMBER TEMPERATURES, as computed by the National Climatic Data Center. Below normal temperatures dominated the United States, yielding the 19th coolest November on record.

TABLE 1. RECORD NOVEMBER PRECIPITATION.

<u>STATION</u>	<u>TOTAL (IN)</u>	<u>NORMAL (IN)</u>	<u>PCT. OF NORMAL</u>	<u>RECORD TYPE</u>	<u>RECORDS BEGAN</u>
MIAMI, FL	13.84	2.69	514.5	HIGHEST	1940
OKLAHOMA CITY, OK	8.02	1.51	531.1	HIGHEST	1940
FORT WAYNE, IN	8.01	2.57	311.7	HIGHEST	1939
GREENVILLE, SC	7.85	3.12	251.6	HIGHEST	1951
MOLINE, IL	6.74	1.94	347.4	HIGHEST	1927
GREEN BAY, WI	5.55	1.73	320.8	HIGHEST	1947
WATERLOO, IA	5.49	1.65	332.7	HIGHEST	1951
SAVANNAH, GA	5.16	1.90	271.6	HIGHEST	1951
LAS VEGAS, NV	0.00	0.42	0.0	LOWEST	1949
BAKERSFIELD, CA	0.00	0.64	0.0	LOWEST	1938
LOS ANGELES, CA	0.00	1.51	0.0	LOWEST	1936

NOTE: Trace precipitation is considered ZERO precipitation. Stations with no precipitation are only included if normal precipitation is 0.25 inches or more.

TABLE 2. RECORD NOVEMBER AVERAGE TEMPERATURES.

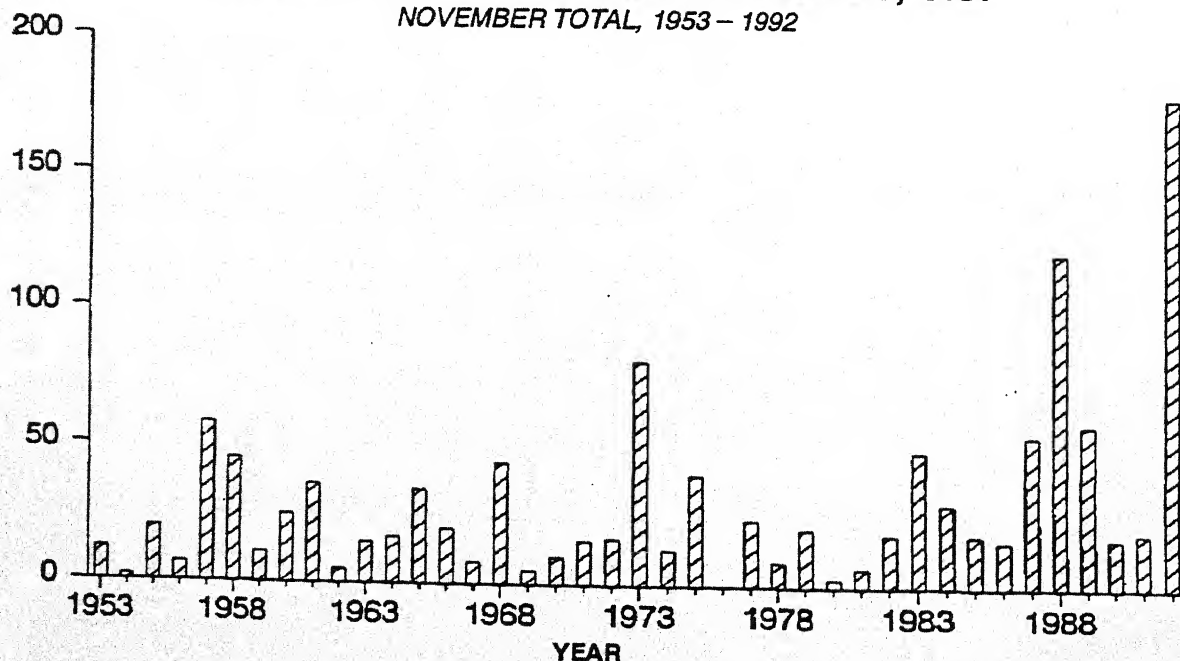
<u>STATION</u>	<u>DEPARTURE (°F)</u>	<u>AVERAGE (°F)</u>	<u>NORMAL (°F)</u>	<u>RECORD TYPE</u>	<u>RECORDS BEGAN</u>
BURNS, OR	-5.4	30.2	35.6	LOWEST	1947
PUEBLO, CO	-9.0	31.1	40.1	LOWEST	1947

TABLE 3. RECORD NOVEMBER EXTREME TEMPERATURES.

<u>STATION</u>	<u>EXTREME (°F)</u>	<u>DATE OCCURRED</u>	<u>RECORD TYPE</u>	<u>RECORDS BEGAN</u>
WEST PALM BEACH, FL	91	NOV 06	HIGHEST	1937
ORLANDO, FL	89	NOV 05	HIGHEST	1943

NUMBER OF OBSERVED TORNADOES, U.S.

NOVEMBER TOTAL, 1953 - 1992



NATIONAL CLIMATIC DATA CENTER, NOAA